

Amdt. Dated Feb. 10, 2006

Reply to Office Action of Sept. 6, 2005

**INVENTION TITLE**

[Double Width Offset Length Swab]

**CROSS-REFERENCE TO RELATED APPLICATIONS****References Cited****U.S. PATENT DOCUMENTS**

5,127,899	02/1991	Schmerse, Jr.....604/1
6,080,126	08/1998	Zygmunt, et al.....604/1
3,090,080	05/1963	Pellicone et al.....19/145.3
3,452,650	07/1969	Cobb .....493/342
3,324,849	06/1967	Harvey Kravitz .....600/240
6,079,423	06/2000	Suzuki, Akio.....132/320

**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT**

Not Applicable

**THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT**

Not Applicable

**INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC**

Not Applicable

**BACKGROUND OF THE INVENTION****3. Field of the Invention**

The present invention relates to a new approach to the traditional swab, which is typically used for cleaning a user's skin and applying topical treatments such as medications or makeup to a user's skin.

**4. Description of the Related Art**

The traditional swab is comprised of 2 primary components: a body frame, typically a stick fashioned from either paper, plastic or wood, and an applicator, typically an absorbent material such as cotton, foam rubber or other synthetic material, attached at one or both ends of the body frame.

One issue with the traditional swab design relates to the potential danger of damage to the eardrum when swabs are improperly used to clean the outer ear, as referenced in U.S. Pat. No. 5,127,899 (Schmerse, Jr.).

Amdt. Dated Feb. 10, 2006

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A second area of concern regarding traditional designs centers on product manufacturing costs, which can be high due to the requirement of rather complex and expensive machinery and manufacturing techniques, as referenced by U.S. Patent No. 6,080,126 (Zygmunt, et al.). The goal of present invention is to provide an improvement over traditional cotton swabs in terms of safety and versatility, and to suggest a solution to the above stated issues while maintaining a similar cost of manufacture in relation to more conventional swabs.

### BRIEF SUMMARY OF THE INVENTION

In order to solve the foregoing problems, according to a first aspect of the present invention, the body frame width is double that of the round sticks used by traditional swabs, providing the amount of body frame width necessary to create an offset length to which the applicator can be affixed.

In order to solve the foregoing problems, according to a second aspect of the present invention, an offset between the distance of the rearward and forward portions of the applicator area is created by a square cutout at each end of the body frame, resulting in an extended portion of the swab which prevents the swab from intruding beyond a safe distance into the ear canal, providing superior drying or cleaning of this portion of the ear.

In order to solve the foregoing problems, according to a third aspect of the present invention, an approach to body frame construction is described wherein:

lengths of inexpensive plastic sticks are cut down to a prescribed length by a conveyor system, or

rolls of inexpensive plastic material are cut down to a prescribed length by a conveyor system, and

an offset metal blade is defined to cut a plastic stick or roll at a prescribed distance along its length to create the swab's body frame.

### SEQUENCE LISTING

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## **DESCRIPTION**

### **Brief Description of Drawings**

**[Para 1]** FIGURE 1 shows the completed swab.

**[Para 2]** FIGURE 2 is a cross section view showing the relative position of the absorbent materials at each end of the body frame to the body frame itself.

**[Para 3]** FIGURE 3 shows an end view of the cut body frame evidencing the rounded edges and relative thickness of the body frame material.

**[Para 4]** FIGURE 4 provides a top view of the body frame lying flat on its widest aspect. It also shows the offset created by the single cutout at lengths along the plastic strip.

**[Para 5]** FIGURE 5 provides a detailed view of the cutting process and the resultant offset created by the single cutout at lengths along the plastic strip.

**[Para 6]** FIGURE 6 shows the shape of the cutting blade used to separate the plastic strip into individual swab body frames.

### **Detailed Description of the Invention**

**[Para 7]** The traditional swab is comprised of 2 primary components: a body frame, typically a stick fashioned from either paper, plastic or wood, and an applicator, typically an absorbent material such as cotton, foam rubber or other synthetic material, attached at one or both ends of the body frame. Generally, the applicator material is attached to the body frame with a small amount of adhesive. The intention of the applicator pads is to absorb fluids, clean wounds and other areas, as well as being used as an applicator for medicines, cosmetics and the like. In this regard, the invention described herein is similar to other traditional swabs.

**[Para 8]** A well-known issue with the traditional swab design relates to the potential danger of damage to the eardrum when swabs are improperly used to clean the outer ear, as referenced in U.S. Pat. No. 5,127,899 (Schmerse, Jr.).

**[Para 9]** The goal of this instrument is to provide a major improvement over traditional cotton swabs in terms of safety and versatility, and suggest a solution to the above stated issue while maintaining a similar cost of manufacture in relation to more conventional swabs.

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**[Para 10]** Unlike the traditional round single length swab, this device can allow deeper and safer access to areas such the outer ear and opening to the ear canal while greatly reducing or even eliminating the possibility of accidental damage from misapplication of the swab.

**[Para 11]** FIGURES 1 through 5 illustrate that this is accomplished by two significant design improvements: the doubling of the body frame **11** width over the round sticks used by traditional swabs, and the inclusion of an offset **12a** and **12b** distance between the rearward and forward portions of the applicator area **10** created by a cutout **13** at each end of the body frame. This prevents the extended portion of the swab from intruding beyond a safe distance into the ear canal, providing superior drying or cleaning of this portion of the ear. FIGURE 3 shows an end view of the cut body frame evidencing the rounded edges and relative thickness of the body frame material. The wider and sturdier design allows for use of the swab in situations where either a traditional size swab will not work, or a single swab will not suffice.

**[Para 12]** A second area of concern regarding traditional designs centers on product and manufacturing costs. While this is a reasonable concern, it is a secondary goal for this design behind providing a safer product than conventional swabs. However, even though this design requires using somewhat more material than a traditional swab, the cost of the manufacturing process for this instrument should be comparable to traditional paper based stick designs, which can require rather complex and expensive machinery and manufacturing techniques, as referenced by U.S. Patent No. 6,080,126 (Zygmunt, et al.).

**[Para 13]** FIGURE 5 shows how the body frame for this device can be manufactured by inserting a length of flat pre-formed plastic strip with rounded edges into a cutting machine using a shaped cutting blade **13**.

**[Para 14]** FIGURE 6 shows the how the cutting machine stamp-cuts the single cutout **13** along pre-determined and consistent distances along the length of the pre-formed plastic strip creating the offset **12a** and **12b**. This process results in consistent fixed length body frames with practically no waste from the manufacturing process itself. The length of original material could be either in long sticks or from a roll. This material could be either solid or hollow bodied to meet the needs of specific application requirements.

**[Para 15]** The body frames **11** are then moved down the production line where one of two options can be followed:

Amdt. Dated Feb. 10, 2006

Reply to Office Action of Sept. 6, 2005

**[Para 16]** 1) A small amount of adhesive can be applied to each end of the body frame **11** , whereupon the absorbent material **10** is attached to the adhesive covered areas. If using cotton fiber as the applicator material, this would be followed by twisting the body frame **10** to wrap the material into the applicator shape. In relation to rolling and applying cotton fiber specifically, please refer to U.S. Pat. No. 3,090,080 (Pellicone et al.), U.S. Pat. No. 3,452,650 (Cobb) and Canadian Patent 990,564 (Cottrell).; or

**[Para 17]** 2) By heating the ends of the cut plastic body frame **10** to a temperature high enough for the absorbent material to become attached directly to the semi-melted portions of the body frame. This would also lower the materials costs over traditional swab manufacture by eliminating the need for adhesives altogether.

**What is claimed is:**

**[Claim 1]** A swab comprising two primary components:

a straight, wide, flat, elongate body frame with two ends opposite one another made of pre-formed plastic with rounded edges; and an absorbent applicator material attached at both ends of the body frame, wherein:

said body frame width is double that of the round sticks used by traditional swabs, providing the amount of body frame width necessary to create an offset length to which the applicator can be affixed, and

said body frame is formed with a square cutout at each end resulting in an offset length, and

the cutout at one end of the body frame is inverse from the cutout at the opposite end of the body frame, and

said absorbent applicator material will be either cotton fiber, foam rubber or any suitable similar type material.